

## CLAIMS

- 1           1. A method for reducing the effects of inbound interference in a powerline  
2 transmission system comprising the steps of:  
3           receiving a first signal on a first line of said transmission system, said first signal  
4 comprising a modulated carrier signal component and an interference component;  
5           receiving a second signal on a second line of said transmission system, said  
6 second signal comprising a modulated carrier signal component and an interference  
7 component; and  
8           adjusting at least one characteristic of at least one of said first and second  
9 signals to reduce the effects of external interference on said transmission system.
- 1           2. The method of claim 1 further comprising the steps of:  
2           determining adjustment parameters by adjusting said at least one characteristic  
3 of at least one of said first and second signals until the output of a differential receiver  
4 operating on said first and second signals is zero.
- 1           3. The method of claim 1 wherein said step of determining adjustment  
2 parameters is performed during a time period when data is not being transmitted via  
3 said powerline transmission system.
- 1           4. The method of claim 1 wherein said step of determining adjustment  
2 parameters is performed during a time period when data is being transmitted via said  
3 powerline transmission system.
- 1           5. The method of claim 1 wherein said at least one characteristic is signal phase.
- 1           6. The method of claim 1 wherein said at least one characteristic is signal  
2 magnitude.

1           7. The method of claim 1 wherein said powerline communication system is a  
2 frequency division multiplexed system transmitting data on a plurality of frequency  
3 channels.

1           8. The method of claim 7 wherein said step of adjusting is performed  
2 independently for each of said frequency channels.

1           9. Apparatus for reducing the effects of inbound interference in a powerline  
2 transmission system comprising:

3           means for receiving a first signal on a first line of said transmission system, said  
4 first signal comprising a modulated carrier signal component and an interference  
5 component;

6           means for receiving a second signal on a second line of said transmission  
7 system, said second signal comprising a modulated carrier signal component and an  
8 interference component; and

9           an adjustment module for adjusting at least one characteristic of at least one of  
10 said first and second signals to reduce the effects of external interference on said  
11 transmission system.

1           10. The apparatus of claim 9 further comprising:

2           means for determining adjustment parameters by adjusting said at least one  
3 characteristic of at least one of said first and second signals until the output of a  
4 differential receiver operating on said first and second signals is zero.

1           11. The apparatus of claim 9 wherein said at least one characteristic is signal  
2 phase.

1           12. The apparatus of claim 9 wherein said at least one characteristic is signal  
2 magnitude.

1           13. The apparatus of claim 9 wherein said powerline communication system is a  
2 frequency division multiplexed system transmitting data on a plurality of frequency  
3 channels.

1           14. A powerline communication system comprising:  
2 a first transmission line;  
3 a second transmission line;  
4 at least one receiver for receiving first and second modulated carrier signals via  
5 said first and second transmission lines respectively; and  
6 an adjustment module for adjusting at least one characteristic of at least one of  
7 said first and second carrier signals to reduce the effects of external interference on  
8 said transmission system.

1           15. The powerline communication system of claim 14 wherein said at least one  
2 receiver is a differential receiver.